Partnership for Clean Indoor Air

Full Proposal

Submitted by: Solar Household Energy, Inc.
Contact Person: Louise Meyer

Solar Household Energy Inc. offers the following elaboration on our original concept proposal to assess the indoor air quality implications of introducing solar ovens to 2,000 homes in rural Mexico. We will attempt to address specific questions raised in your feedback to the concept proposal, as well as provide greater details on our plans. For short-hand, we will refer to this project as the Mexico solar cooking initiative (MSCI).

Background and executive summary:

Several studies have been conducted in recent years which document the adverse health impacts of biomass cooking techniques in Mexico. Studies include:

- *Assessment of particulate concentrations from domestic biomass combustion in rural Mexico* by W.G. Bragg + E.B. Shultz in "Environmental Science and Technology" (1996);
- *Modeling particulate exposure and respiratory illness risk in general population* by C. Santos-Burgoa in 'Gaceta Medica Mexicana' (1998);
- *Household firewood use and the health of children and women in Indian communities in Chiapas,* Mexico by H. Riojan-Rodriguez and Kirk Smith in International Journal of Occupational and Environmental Health #7 (2001).

MSCI seeks to build upon that knowledge base to provide insights on practical and sustainable ways to address the well-documented problems. In particular, by working in cooperation with NGOs in targeted rural Mexican communities, employing market mechanisms, MSCI will assess:

- The health affects of the partial substitution of biomass cooking with solar cooking techniques;
- The most effective techniques to introduce solar cooking in rural Mexico; and
- The sustainability of solar cooking practices based upon demographic and marketing variables.

MSCI will leverage a complementary project, The HotPot Initiative, which received partial funding support through The World Bank's "Development Marketplace" program subsequent to the submission of our Concept Proposal, to channel a higher proportion of EPA funds into focused research on indoor air quality issues. Thus by "piggybacking" a related effort, common project costs – including solar oven manufacturing and staff travel expenses – MSCI can yield greater insights than otherwise would be possible.

This description of MSCI is organized according to the ten selection criteria enumerated in your proposal guidelines.

1. Work experience

Organizational experience most specifically related to MSCI was the pilot introduction of 30 "HotPot" solar ovens in Sierra Gorda Biosphere Reserve, Mexico, May, 2003 in collaboration with local NGO, Grupo Ecologico Sierra Gorda (GESG) with funding from Fondo Mexicano para la Conservation de la Naturaleza (FMCN) as the umbrella organization. (These same organizations will play a role in MSCI.) The measurable results were strong user acceptance of solar cooking due to cost saving on gas and firewood; no burns from fire; time saving; zero smoke emission.

A similar initiative was undertaken by Solar Household Energy Inc. personnel in Adana, Turkey, in 2001, when 50 solar ovens were introduced. Follow-up activity was conducted in June, 2003. The measurable results were strong user acceptance due to cost saving on gas (price increase of 8% /year); high-quality of food prepared in solar ovens; time-saving; no burns (safe for children).

Additional work experience are described under "key staff" below.

2. Proposed goals:

Our ultimate goals are to determine answers to the three questions noted in the summary:

- The health affects of substitution of biomass cooking with solar cooking techniques;
- The most effective techniques to introduce solar cooking in rural Mexico; and
- The sustainability of solar cooking practices based upon demographic and marketing variables.

How we will achieve those goals will be described in responses to other selection criteria described throughout this document. However, on a more immediate and tangible level, our goals are to:

1. Manufacture 2,000 "HotPot" solar panel ovens;
2. Train small-scale local distributors to market the ovens;
3. Assure the sale of those 2,000 ovens;
4. Train HotPot purchasers and possibly others in targeted communities on solar cooking techniques.
5. Collect and analyze essential data (see "Monitoring and Evaluation" narrative below).

3. Target population

Mexico has the highest per-capita energy consumption rate in Latin America. In rural areas biomass still accounts for most energy supplies. According to the World Energy Council, firewood supplies 69% of the energy consumption in Rural Mexico. The group also estimates that 95% of energy use in rural Mexico is for cooking. Thus solar cooking, if ultimately widely adopted in rural Mexico, would cause a dramatic reduction in firewood-based cooking and its attendant health costs.

Our primary targeted population will be in the Sierra Gorda conservation district in the state of Queretaro. We also expect to work in Quintana Roo, Chihuahua and Oaxaca – see "key staff" section.

In Queretaro, we will be working in cooperation with the *Grupo Ecologico Sierra Gorda A.C.,* an NGO dedicated to promoting sustainable and environmentally appropriate development. Sierra Gorda has a population of 100,000, primarily poor residents spread among 694 villages inside 900 thousand acres. The average family size in Sierra Gorda is seven. All families cook with firewood, some cook with both firewood and bottled gas. Average monthly cost of firewood is $8 and $20 for a 30-kilogram tank of natural gas.

Families eat three meals a day. The diet consists of beans, chili sauce, eggs, rice, dehydrated soy, few vegetable and meat on occasion with tortillas. The largest meal is taken between 1-3pm.

Typical of the residents is [redacted], a 37-year-old resident of Mavi, a small village in the Sierra Gorda. Her husband works in the U.S.; she cares for five children (ages 4-16). [redacted] occasionally earns $10 for a day's labor collecting trash. For cooking fuel, [redacted] alternates between bottled gas, at a cost of 80 cents a day, and wood, which she either collects or purchases.

The choice is a dilemma: Gas is easier to use than wood, but expensive, consuming nearly 10% of her basic income. Wood is cheaper, but more cumbersome to use, emits dense smoke and occasionally burns young children. In addition, wood harvesting for cooking fuel (and other purposes) has caused environmental damage. Gathering wood is increasingly time-consuming as it becomes more scarce.

Through Solar Household Energy's May, 2003 pilot project in Sierra Gorda, it has become evident that women like Norma are willing to use solar cooking to address the costs and health problems associated with biomass-based cooking. This is why the MSCI will target 2,000 women like Norma.

4. Addressing social/behavioral issues

The MSCI strategy for addressing social and behavioral impediments to the adoption of a new cooking technology builds upon the insights gained by this project's leaders through direct recent experience in targeted areas, as well as years of efforts throughout the world.

Essential ingredients for the long-term adoption of solar cooking include the following:

- **People must have a personal financial stake in the success of solar cooking.** Thus solar ovens are sold to users at a price that is both affordable, yet meaningful. (HotPots are to be priced at approximately $30.)
- **The economic advantages of solar cooking must be clearly demonstrated.** Therefore training activities include a component dealing with the "cost" of foraging for firewood as well as the financial cost of purchasing other fuels.

- **Solar cooking must be perceived as healthy.** Training sessions address any concerns or misgivings about the health effects of eating solar-cooked food. (An approach that proved effective in prior solar cooking introduction projects in Mexico involved a combination of dialog and providing a live example of a healthy long-term consumer of solar-cooked food.)
- **A positive social context.** When training sessions are offered to women in a community in a group setting, the social dimension reinforces acceptance of adoption of the new technology. That is, solar cooking is perceived as an acceptable (and fun) community activity, and not the unconventional behavior of an elite group of pioneers.
- **Training must be thorough.** Instruction must take place over several days, rather than a "one-shot" approach, in order to reinforce key messages and provide sufficient practical experience that trainees feel confident and competent to cook a variety of meals under varying conditions.
- **Solar cooking must not be "oversold."** Solar cooking is well suited to the preparation of most, but not all, elements of a typical rural Mexican diet. For example, tortillas must be prepared over a stove. In addition, solar cooking cannot be performed during periods or rain, or after the sun has set. Thus training must clearly lay out solar cooking's limitations as well as its strengths, so that women do not become disillusioned and abandon the practice.
- **Training must be conducted by community leaders.** The MSCI strategy involves identification, recruitment and training of instructors who are known and respected figures within the community. Instructors are also chosen on the basis of their teaching and communication skills.
- **Monitoring and follow-up activity.** When people recognize that the community-based organizers of a solar cooking initiative are dedicated to following up after the initial introduction of the solar cooking technology, they are more likely to persist in the utilization of that technology, than otherwise. The added dimension of the evaluation of health impacts of this activity, as will occur with MSCI, is expected to provide even greater impetus for a strong commitment to solar cooking.

5. Market development

Solar ovens represent a proven (and heretofore poorly implemented) technology that enables users to prepare a wide variety of foods in a smoke-free, economically and environmentally beneficial manner. Mexico, with its abundant sunshine and the standard rural diet, is ideally suited for this technology. This is especially true of low-income rural people, who stand to gain from its low cost, health benefits and the ability of people cooking with solar ovens to pursue other activities while their solar ovens are in use.

Solar ovens cannot entirely replace traditional bio-mass burning cooking methods, but can substantially (by at least 60%) reduce utilization of such techniques. (Indeed, it is the aim of this project both to document this potential, and determine how to maximize it.)

MSCI is a start-up venture that will exploit a new solar oven designed with the needs of low-income rural populations in mind. Some 2,000 HotPots will be manufactured and assembled in Monterrey, Mexico under contract by a local energy products company (Energia Portatil) and purchased by residents of targeted communities. We will buy down the risk of the initial manufacturing run by committing to purchase those 2,000 units (at wholesale prices). The retail price for the HotPot is $30-$35 – not inexpensive for targeted buyers, but affordable when energy cost savings are factored into the equation.

Marketing techniques that have proven successful in Sierra Gorda primarily involve direct communication with prospective buyers in a variety of venues, including community meetings at which solar cooking techniques are demonstrated and free samples are offered.

MSCI will employ a traditional business model that harnesses the financial incentives of the free market and leverages the community relationships and local expertise of rural development-oriented NGOs (identified above and under "key staff") operating within targeted regions. Small scale merchants will be identified and supported by these organizations in target communities. This effort will establish a long-term bridge between the mainstream business sector and isolated rural customers through:

- Micro retail enterprise management training;
- Initial purchase for consignment sale by micro distributors;
- Locally appropriate marketing efforts; and
- Effective solar cooking instruction.

Why are NGOs interested in participating in this project, and playing a vital role in facilitating the commercial distribution of solar ovens? These organizations are dedicated to achieving sustainable economic development, health and environmental benefits in the communities they serve. The dissemination of solar cooking technology via micro-enterprises is consistent and compatible with their aims on all fronts, hence their desire to participate in the project.

The following timeline enumerates steps will be taken following project approval:

Initial phase:

- Complete face-to-face meetings with NGO leaders, secure agreements outlining goals and timetables for retailer recruitment, retailer training program and solar oven sales goals. 60 days following project approval ("FPA").
- Design and produce solar oven user manuals. 60 days FPA.
- Prepare training materials for solar cooking instructors, trainees. 60 days FPA
- Completion of solar oven retailer recruitment. 120 days FPA

Commercial phase:

- Training mission # 1: Meet with NGO staff, new solar oven retailers. Organize and conduct training sessions for individual retailers and future on-site solar cooking trainers, as well as initial HotPot purchasers. 150 days FPA.
- Training mission # 2 (same purposes as # 1, different trainees). 180 days FPA

- Training mission # 3 (same as # 1, different trainees). 210 days FPA.
- Conduct solar oven point of sale site visits: Follow up will occur with retailers at least twice over the course of the project by trainers to monitor sales progress, research data collection, and help address any challenges. Duration of two-year project period.

Project completion:

A final detailed report analyzing the project will be produced and submitted to EPA within 30 days of the end of the active phase of the Mexican Solar Cooking Initiative.

6. Technology design & performance

Solar ovens are not new; there are scores of designs in the world today. Our analysis of the solar cooking devices now in use identified three barriers to broad acceptance:

- The best models on the market, the SK series by EG Solar or the Sun Oven, for example, are too expensive broad acceptance in venues such as rural Mexico.
- The most affordable model, the "CooKit," while successfully used in refugee camps, is small, awkward to use, and somewhat frail and has enjoyed limited commercial success.
- No durable yet affordable solar oven is being manufactured in large quantities.

To address these challenges, SHE, Inc. opted for a simple "panel" oven invented by French physicist Roger Bernard. In the 1990's, volunteers of Solar Cookers International adapted Dr. Bernard's idea for their CooKit, a cooker with a cardboard reflector widely accepted in refugee camps.

In consultation with Dr. Bernard, SCI volunteers, the Florida Solar Energy Center and others, SHE, Inc. upgraded the proven CooKit to address the challenges described above and created the HotPot, a larger, more durable, efficient and easier to use solar oven. (Note: Technical testing data on the HotPot is available for viewing at this Web address: http://www.fsec.ucf.edu/Solar/PROJECTS/SolarCooker/cooker.htm) Field testing of the HotPot on five continents confirmed the viability of design and materials.

The HotPot cooks a five-liter pot of food. A black steel pot is suspended by its flange inside a transparent tempered glass bowl with 1/2" of air space between the two. The pot has a tight-fitting transparent tempered glass lid.

Surrounding the pot is a reflector. It is collapsible for easy carrying and storage.

Direct and indirect solar energy penetrates the transparent glass, strikes the pot and converts to heat. The heat is retained around the pot by the glass bowl, achieving cooking temperatures.

On a sunny day in Mexico the HotPot can bring a liter of water to a boil in 40 minutes. It will cook a chicken in as little as two hours, and most staple grains in three (when pre-

soaked). Only minimum attention to the cooking food is required which frees women to engage in more productive activities.

7. Monitoring and evaluation

Methodology

Field workers will be trained by the project epidemiologist [redacted] – see "Key Staff" below) who will also develop interview protocols and data sheets in Spanish & English. A uniform exposure assessment and standard health outcomes protocol will be developed by the partnership. There will be an initial survey of the project areas to collect base-line information on cooking practices, fuel usage and basic socio-economic parameters. This survey will cover a total of 400 households in the project areas. All potential NGO's will be interviewed and a review of their previous activities and economic status will be made.

A mid-term review (after 1 year) will measure implementation, technology design, health effects and attitudes (see below) in a 10% sample of households and repeat the study in a similar number of control households. NGO's will also be followed for measures of implementation and training.

A final review will take place at the end of the project period (after 2 years).

Data collection

Data will be collected by field workers supervised by the project epidemiologist. Field staff will operate in pairs -- one worker will interview while the other will record data. Data will be transferred to a computer with minimum delay and analyzed using a PC-based statistical package (such as SPSS).

In addition, the research team will employ an Indoor Air Pollution monitoring device designed by Kirk R. Smith of the University of California (Berkeley) and funded by Shell. The device will track carbon monoxide and particles.

<u>Measurements to be made (all NGO's will be followed, 10% sample of households):</u>

- Implementation of project aims (the introduction of the HotPots)
  - number of NGO's recruited
  - commercial activity of each (quantity and price, economic aspects incl. profitability)
  - the amount of training of trainers, the amount of training done by them
  - simple demographic/socio-economic measures of acceptors/non-collaborators
  - number of households with solar cookers
  - hours/number of meals prepared
- Technology design
  - cooker acceptance, use & effectiveness

- perceived qualities and drawbacks
- overall user acceptance of the technology
- economic impact (comparative costs and benefits)

- Health effects
  - changes in fuel usage / exposure to smoky atmosphere
  - changes in kitchen/home environment
  - changes in type/quality of food produced (based on food pyramid)
  - changes in eating habits
  - pattern/incidence of respiratory symptoms
  - incidents of respiratory and other illnesses
- Attitudes and perceptions of users of solar technology (structured interview)
  - how family members view the benefits and advantages of solar cooking
  - perceived quality of the food prepared
  - comparative costing compared with using traditional fuels and the perceived effects upon health
  - any negative attitudes to solar cooking and the reasons for them (attempts will be made to determine the origin of such beliefs: hearsay, marketing by the supplier, personal observation etc.)
  - interviewees' need for further information, recipe books, group discussions, further training etc.

< Personnel info redacted >

9. Budget and timeline

As noted earlier, the MSCI leverages a complementary solar cooking project in Mexico, the World Bank "Development Marketplace"-funded HotPot Initiative. Matching Funds enumerated in the budget below are to be provided in part by the Development Marketplace grant and partly by support from general funds from Solar Household Energy Inc.

Mexico Solar Cooking Initiative Budget

(Application # 68)

	Requested from EPA	Matching Funds
Personnel		
Project manager	30,000	30,000
Mexico liaison	10,000	20,000
Project support (US)	20,000	30,000
Solar cooking trainers	13,000	13,000
Research management	5,000	5,000
Travel		
U.S. to Mexico	10,000	10,000
Intra-Mexico	6,000	3,000
To EPA workshops	3,000	-
Equipment		
HotPot solar ovens	22,000	22,000
Air quality monitors	8,000	-
Supplies		
Training materials	1,500	1,500
Marketing materials	2,500	2,500

Services		
Shipment of ovens	3,400	3,400
NGO retailer training	10,000	10,000
NGO promotion costs	5,000	10,000
TOTAL	149,400	160,400
COMBINED PROJECT COST	309,800	

10. Sustainability

The operating premise of this project is that a commercially self-sustaining business model can be established following the recruitment and training if the initial set of distributors and customers. The prospects for sustainability of a complementary project, the HotPot Initiative, were deemed strong by the World Bank in its decision to provide support for that project in a highly competitive grant application process.

Revenue generated from HotPot sales will be reinvested in ongoing solar cooking promotion efforts in Mexico and elsewhere, applying technical and market-based insights generated by this project.

Some 67 countries have adequate sunshine to cook with solar ovens. Most are situated between the Tropics of Capricorn and Cancer, regions where forests are being depleted, where women must forage for firewood at great distances. Thus the suitability of the HotPot for use in other countries is clear.

The general formula of The HotPot Initiative could be duplicated in many – but not all – of those 67 countries. Key success factors include:

- The presence of local, well-connected NGOs with complementary goals and adequate resources;
- Financial assets of target customers; in the poorest countries, some form of subsidy – from micro-financing to heavy discounts -- may be required to bring the price of the HotPot within reach of the people who need it most; and
- The ability to manufacture HotPots close enough to markets to limit potential shipment and/or import tariff cost issues.

We believe that Mexico may prove to be the laboratory that will yield the insights and discoveries that ultimately could enable this clean technology to improve the health and lives of tens of millions of people.

< Final Report >

USEPA Pilot Project Quarterly Reporting Format

SECTION 1: BACKGROUND INFORMATION

1.Name and contact point of grantee organization			
Name of contact person	*Mailing address*	*Contact details*	
[redacted]	Solar Household Energy, Inc. P.O. Box 15063 Chevy Chase, MD 20815	*Telephone:*	[redacted]
		Fax:	[redacted]
		Email:	[redacted]
Additional contact(s)	*Mailing address*	*Contact details*	
[redacted]	Same	*Telephone:*	[redacted]
		Fax:	[redacted]
		Email:	[redacted]

2.Grant number and title of project *Enter the grant number and project title as it appears in the grant.*
XA – 83173601 – 0 " Mexico Solar Cooking Initiative" (MSCI)

3.Location of project *State the country and province(s) or region(s) where the project is being implemented.*
Mexico (in the states of Coahuila, Querétaro and Oaxaca)

4.Reporting period *Enter the dates in mm/dd/yyyy format (eg. 01/05/2001).*			
From month/year	11/1/06	**To month/year**	12/31/06

5.Project summary details			
Date of award	10/19/04	Total USEPA grant amount awarded	$ 149.400
Project period	11/15/04-11/14/06	Disbursed to grantee to date	$ 149,356.26
Actual start date	11/15/04	Expenditure incurred by project	$ 149,356.26
Total Project budget	$309,800	Additional funding secured to date (if applicable)	$ 160,400

6)What have you achieved?
Summarize your main achievements (both expected and unexpected) during the last three months. How have these achievements contributed to the purpose and goal of the project?

Our partner, the Mexican Fund for the Conservation of Nature (MFCN) continued weekly conference calls with all parties.

A new lot of 4,100 HotPots was manufactured in Monterrey, where they are being warehoused. Oscar Guajardo, SHE and MFCN's business partner will continue managing assembly, quality control and shipping.

MFCN received a positive response to a $300,000, two-year grant request from the Alcoa Foundation. Proceeds will primarily be used to pay for the manufacturing cost of additional HotPots. MFCN's new strategy has both commercial and donation elements. It is in the process of establishing agreements with four large NGOs in Nuevo León, Querétaro, Coahuila and Puebla to which it will donate 1,000 HPs each over the course of the two years, and fund user training and follow-up activities. MFCN's goal is to reduce wood consumption in the targeted communities 20% by 2010.

MFCN has drafted a contract with GIRA, a scientific NGO in Mexico. GIRA is testing 12 HPs in the field and in its laboratory, side by side with its "Patsari" fuel-efficient stove to reduce CO2 emissions. This study is funded by SEMARNAT (Mexico's equivalent of the US EPA), with a match from GIRA and MFCN.

In spite of poor weather conditions (cloudy, cold) and the holidays HotPot sales were good, 326 were sold during this quarter.

Media coverage continues to play a significant role in increasing IAP awareness:

1) The HP exhibit at Green Festival in Washington, D.C. in October led to a 6-min. video on LinkTV 'EarthFocus,' scheduled to air on Feb. 7.
2) MSCI's Heliodoro Cruz interviewed 1/18/07 on radio in INI de Jamiltapec, Costa Chica, Mexico
3) Louise.Meyer was interviewed 1/15/06 by Social Ventures Technology Group, S.Francisco,CA to evaluate environmental programs managed by GESG
4) Film clip of MSCI's Lorena Harp's presentation filmed during Palenque Teacher's Workshop 11/06 is featured on YouTube http:// www.youtube.com/watch?=uxppndvq3w8
5) Article in Practical Action's ***Boiling Point*** Nr. 52 titled "Solar Cooking and Health" p.30
6) Letter of support from Dr. Isabel Hawkins, NASA in collaboration with Center for Science Education & Space Sciences, U.CA, Berkeley educational project " We are all one under the Sun"

Teaching the benefits of solar cooking in educational programs continue in Sierra Gorda where over 40% of the school children and their families learn about the dangers of IAP.

MSCI's Michael Rattinger has written a brochure on Carbon Mitigation through the use of the HotPot as a centerpiece. The brochure will be used as support material for key meetings with potential participators of the carbon mitigation strategy.

Louise Meyer gave a presentation on the MSCI at the "IAP – Healthy Kitchens" Seminar Lima, Peru 12/13-14/06. She was invited by Winrock, a co-sponsor of the event, with the Pan American Health Organization (PAHO). Her presentation, together with the HotPot display, stimulated interest among key PAHO personnel. One HotPot remains on display at PAHO's Peru headquarters. Louise was also invited to meet with the Peru staff of Practical Action seeking her advise on the best cooking systems for IAP reduction in Peru's Puno region. EcoPlaneta, a Spanish NGO with funding from the EU, will test three models of solar cookers beginning in March. These tests will take place in three villages located south of Puno. EcoPlaneta intends to purchase 25 HotPots. Roberto Accinelli, M.D., the chief scientific investigator on IAP reduction in the PAHO/WHO/GTZ project in northern Peru, stated the view that solar cooking (and the HotPot) are an indispensable solution for cooking in Peru's high-altitudes regions (such as Puno) where populations rely on llama dung for fuel. Dr. Accinelli asked for sample HPs to test for user acceptance, since no fuel-efficient stove in existence (according to his experience) provides clean combustion using llama dung.

A goal set in between SHE and MFCN in a planning meeting June, 2006 was to select an appropriate fuel-efficient stove and a heat-retention system to complement the HotPot. Solar cooking is not a stand-alone technology. Progress is being made on several fronts: (a) the University of Arizona Nogales Study successfully used the integrated cooking system (b) GIRA is testing 12 HPs alongside its Pasari stoves; (c) PAHO Puno project may test HotPots alongside Ikawasi stoves (d) I gathered field experience with Cedesol Bolivia that has mastered the integrated cooking system which it began using five years ago.

Issue/learning point	Action taken/required
MFCN effort to secure 2nd grant from Alcoa	Grant approved on December 2006 amounting to $300,000 for two years
Shared material between MFCN + SHE still not easily accessible; continued need to create catalog for: Trainers Manuals, Recipe Books, reports, Power Points, Photos, publicity materials (banners,flyers)	Mariana Diaz and Louise Meyer working together to assure access of both organization to these materials
Antonio Cuellar's personal dedication to MSCI did not wane in spite any financial incentive from SHE Inc.	His personal conviction that solar cooking would benefit rural populations and his patience with the procedures of his State Government led to funds being dispersed to pay for 155 HPs.
Need for continued CDM research + voluntary green conferencing + travel market to fund HP project in future	Michael Rattinger to publish a brochure on carbon mitigation in January
Regularity of weekly HP demonstrations at Guadalajara's organic market.	Ana Paola Solis solar cooks every Saturday to stimulate interest and sales.
Cecilia Sanchez, Equilibrium Project Mexico To continue HP training + promotion for women's groups that grown Maya nuts	Trained 50 women in this Quarter. The $50,000 the Equilibrium Project won in 2006 from St. Andrews for the Environment (Scotland) goes to HP training.
Increase the number of towns that Jacinta in Sierra Gorda promotes HPs	Number increased from 14 to 15 in this Quarter
Lorena Harp trained GIRA well-integrated field staff how to use HotPots and how to train locals	Cianocitos is arid, it offers perfect climate to solar cook. GIRA staff now enthusiastic solar cooks
MFCN's annual staff meeting brought together all branches: Forestry, Protected Areas, Fire Prevention and the Directors of each	Lorena Harp will be training women to solar cook in the Protected Natural Area of Calakmul in March '07
Lorena's solar cooking demonstration led to meeting with J.M Frausto, MFCN's Director of Fire Prevention. He will seek to include HotPots in projects in 2007 especially in indigenous areas.	Lorena will provide MFCN's Fire Prevention Dept. with the training needed in HotPot use.
Search for portable fuel-efficient stove using 'rocket principle' compatible with HP	Met with AHDESA, Honduras representative S.Africano
Search for portable heat-retention box/basket compatible with HP	Given Heat-retention box built by Bolivian NGO CEDESOL. Will evaluate it for integration with HotPot
Growing interest of US market in HotPots	US HP sales reached 387 in 2006 (including 275 by GAIAM/Real Goods)
Initiating interest in the HP in Chiapas has been challenging	30 members of FundaMex Association (Mexican business people that provide funds for social programs) met in Monterrey Tech University's campus. "Amigos de Sol" Director, Socorro Velasco set up 4 HPs, solar cooked for 60 of the 300 attendants.

SECTION 1: 8. PROGRESS ACHIEVED IN ACCOMPLISHING PROJECT GOALS *(Goals should correspond to the goals in the approved grant application.)*

SOCIAL/CULTURE CHANGE GOAL(S):					
Planned: Adopting new cooking solar techniques. Recording use on Calendar	**Actual Work Completed:** Solar cooking trainer/ coordinators return to sites where HPs are in use to collect calendar page user logs for Nov & Dec.	**Difficulties Encountered:** Users slow to complete the calendar survey instruments.		**Costs to Accomplish Goal:**	**Self-Rating:** [1] Yellow
People exposed to HP	2162 saw HP demonstrations	Holiday season reduced interest		no cost	Green
Media Coverage	EarthFocus, LinkTV -Radio in INI de Jamiltapec, Costa Chica, -'Boiling Point' article on Solar Cooking & Health - Lorena's PPP on YouTube	None		no cost no cost	Green Green

MARKET DEVELOPMENT GOAL(S):					
Planned: Coordinators, NGOs stimulate new interest in HotPot via demonstrations + workshops.	**Actual work completed:** 27 demonstrations 31 workshops	**Difficulties Encountered:** Winter, cloudy Short quarter, due to Xmas	**Resolution/Corrective Action Plan:**	**Costs to Accomplish Goal:**	**Self-Rating:** [1] yellow
Sell HotPots	326 sold (Jacinta 30, Enrique 125, Lorena 6, Paola 8, Heliodoro 6, Antonio 153)			none	green

[1]Use the following color scheme for self-assessment:
Green = Project either fully or partially achieved its intended purpose, but delivered ALL expected outputs.
Yellow = Project purpose not yet achieved, but some (the most significant) outputs delivered.
Red = Project purpose unlikely to be achieved, and none or a few of the less significant outputs delivered.

TECHNOLOGY DESIGN AND PERFORMANCE GOAL(S):					
Planned: Testing inside lid	**Actual Work Completed:** Lorena Harp field tested 3 models of inside 'peltre' lid prior to having it manufactured	**Difficulties Encountered:** Unexpectedly slowed down cooking time	**Resolution/Corrective Action Plan:** Seeking technical advise from Antonio Cuellar and other experts willing to give information	**Costs to Accomplish Goal:** No cost yet	**Self-Rating:** [1] yellow

EXPOSURE/HEALTH EFFECTS MONITORING GOAL(S):					
Planned Data gathering completed on fuel-wood use done by Heliodoro Cruz	**Actual work completed:** Completed in all 3 sites	**Difficulties encountered:** Analyzing massive amounts of data, some confusing and some inconsistencies.	**Resolution/Corrective Action Plan:** Data being reviewed by multiple experts		**Self-Rating:** [1] Yellow

9. Beneficiaries *In your proposal, you provided an estimate of the number of primary beneficiaries who would benefit from your project. Please provide an indication of who has benefited so far, how they have benefited or been involved, and how many beneficiaries there are to date.*

Who has benefited?	What benefits? What involvement?	How many people?
2,459 HotPot users (326 sold this Quarter)	Clean air when using HotPot; no smoke Safer environment; no fire Time gain; no need to stir food or fear that it will burn and be wasted Money saved no need to buy gas or wood: solar energy is free Less water is used: none needed to cook vegetables or meats; no dirt of pots, in clothes, in hair or on hands.	17,213 people (average family size=7members)

10. Quantifiable Project Results *These indicators are found in the Programmatic Conditions of the USEPA Grant Package.*	**Current Quarter**	**Grant to date**	**Pilot Project Goal**
Number of households educated about the health impacts of indoor air pollution from household energy use:	30,00(radio, TV, Fairs)	250,000	500,000
Number of people with demonstrated increased knowledge of indoor air pollution and mitigation solutions:	2,162	27,662	73,500 (14,500 x family)
Number of homes, and possibly other facilities, using improved cooking and/or heating practices:	326	2909	2,000
Number of new small businesses producing and marketing improved cooking and/or heating technology:	3	21	30
Number of people with reduced exposure to indoor smoke from home cooking and/or heating practices:	Not known	Not known	15,000
If available: Decreases in the number of severity of adverse health effects (e.g., respiratory ailments)	Not known	Not known	
If available: Improvements in quality of life indicators obtained through this project.	Not know	Not known	

SECTION 3: STATEMENT OF PHYSICAL PROGRESS AND ACHIEVEMENTS

11. Activities *In your Statement of Work, you identified the core activities and constituent tasks that would have to be undertaken in order to deliver the outputs. Please attach a revised activity schedule, then note and explain any changes that have been made compared to the original.*

What was planned? *For any activities that have been changed or been rescheduled, please list the activity.*	**Reasons for change** *Please explain the reasons for the change.*	**Issues/learning** *If problems or delays were experienced, explain how they have affected progress. If progress was better than expected, explain why.*	**Action** *What action has been taken or is required to bring the project back on track, or to take advantage of any opportunities?*
No changes			

SECTION 4: MANAGEMENT, PARTNERSHIP AND COMMUNICATION

12. Upcoming major activities

Submission of Abstract to 3rd PCIA Partner's Conference in India 3/20/07; await acceptance.

Weekly conference calls between prime players in MSCI: Mariana Diaz (MFCN), Oscar Guajardo (Production), Mike Rattinger (Carbon Certification), Richard and me.

Invitation to give presentation on MSCI at GTZ International Conference "Cocinas para una Vida mejor" in La Paz, Bolivia, March 5-7, 2007

13. Project management *In your proposal you described the management structure for your project, while in your Statement of Work you indicated how responsibilities would be allocated among the implementing partners. Please indicate whether project management is operating effectively and whether the implementing partners are adequately fulfilling their responsibilities. For any problems that may have arisen, explain how they have been or will be addressed.*

Mariana Diaz is MFCN's coordinator for the whole initiative.

14. Local government support *In your proposal you may have described the support that the local government would provide. Please explain briefly what support has been provided to date, whether this has met with your expectations, and what problems, issues or opportunities have arisen.*

Puebla's Government supported the purchase of 155 hot pots for 2006.

Zacateca's Ecology Institute distributed (work exchange program) 430 HPs in 18 sites in 2006. Zacatecas will purchase 750 HotPots in 2007 and begin training and work exchange distribution beginning in March.

INTERNATIONAL: IAP – Healthy Kitchens Seminar in Lima, Peru 12/13-14/06 may lead to testing of HPs along with introduction of Ikawasi fuel-efficient stoves in Puno area where PAHO/GTZ have a 2-year project to improve housing of 10,000 families.

15. Partnership *In your proposal you outlined how the project would involve collaboration between different stakeholder groups. Please explain briefly how these partnerships (and any other unplanned or unexpected partnerships) have evolved to date, and what problems, issues or opportunities have arisen.*

16. Co-Funding *Please quantify the source and the amount of any co-funding you have received for this project.*

Source	Funding amount	New source (Y/N)
Mexican Fund for the Conservation of Nature	$1,850/month - support salaries of local employees	No
MFCN - 1/3 of Admin. Salary		
MFCN - 2/3 of Coordinators Salary	$1250/month	

	$600/month	

17. Communication *In your proposal you described how you planned to communicate your results or lessons learned to your key target audience. Please explain briefly how your communication strategy has progressed so far and attach any communications materials developed to date.*

No change in strategy

18. Digital photographs *We would like to promote your project on the PCIA website. If you have any digital photographs, please send them to us by email as JPEG attachments.*

1) Maria Gloria Sanchez Lopez, Oxchuc, Chiapas 1st elected female Municipal president discussing HotPot's usefulness with L.Meyer (taken 11/5/06 in Palenque at NASA 'Sun and Science" workshop for teachers.
2) PAHO/Winrock 'IAP - Healthy Kitchens' Seminar held in Lima, Peru 12/13-14/06. Dr. Homero Silva, CEPIS (Pan American Center for Sanitary Engineering & Environmental Sciences) leaning to use the HotPot
3) PAHO/Winrock 'IAP - Healthy Kitchens' Seminar - HotPot display with Maria Esperanza Siria, Nicaragua's National Energy Commission representative.
4) Claudia Dammert, famous Peruvian actress trained by L.Meyer to solar cook uses 3 types of cookers in Huaripampa, Callejon de Huaylas
5) Melissa, age 14 baked her 1st solar cake in Huaripampa, Callejon de Huaylas at the Dammert's house
6) Scout Jamboree in Cochabamba, Bolivia 1/5/07 exhibit and demonstration by Cedesol of Solar Box cookers, efficient stoves and heat retention system
7) David Whitfield, Cedesol Director in Bolivia demonstrating his efficient stove, solar box cookers and hay-basket at Scout Jamboree In Cochabamba, Bolivia 1/5/07 which 4000 scouts from all over Latin America attended.

19. Sustainability *In your proposal, you described your plans for ensuring that the project is financially, socially and environmentally sustainable. If these plans have changed over the past three months, please describe these changes.*

The MSCI has gained strength during this Quarter. The sustainability strategy based in the short term on philanthropic funds, and on the long term on the carbon mitigation strategy, is more consolidated every day. The staff's commitment has given to the initiative a long-term expansion and strategic view.

20. Any other comments *Please use this space to share any other information that has not been covered in the report but which you think is relevant. Feel free to attach relevant documents.*

SECTION 5: NOTIFICATIONS

21. Contact details *Since your last report, has the main contact person changed? If yes, please provide new contact details.*			
Name of contact person	*Physical address*	*Contact details*	
		Telephone:	
		Fax:	
		Email:	

22. Management *Since your last report, has the staffing of any key management positions changed? If yes, please provide details.*		
Name	**Position**	**Replacing**

23. Other changes *Have there been any other changes or is there any other information that you think we need to know?*

SECTION 6: DECLARATION

I confirm that the details contained in this report are correct and are representative of the current status of the project. I am the responsible manager for the project.	
Name	[redacted]
Position in organization	[redacted]
Date	1/31/07

'IAP-Healthy Kitchens' Seminar in Lima 12/06 exhibit of HotPot viewed by M. Esperanza Sirias, Nicaragua National Energy Commission.

Maria Gloria Sanchez Lopez, Oxchuc, Chiapas 1st elected female Municipal president learning about the HotPot.

Claudia Dammert, famous Peruvian actress trained by L.Meyer to Solar cook 8 years ago. She & Oscar use all 3 types of cookers at home in Huaripampa, Callejon de Huaylas

Melissa's age 14 baked her 1st solar cake in Huaripampa, Callejon de Huaylas at the Dammert's house